

## **REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

### **I. Disposition of Claims**

Claims 1-4, 6, 9, 13, 20-23, 25-29, 31, 34-36, 39, 43-55 are pending in this application. Claims 1, 20, 39, 52, 54, and 55 are independent. Claims 1-3, 6, 20-22, 25, 27, 29, 31, 43, 45, and 50-55 have been amended by this reply. The remaining claims depend, directly or indirectly, from claims 1, 20, and 52.

The Applicant thanks the Examiner indicating that claims 37, 38, and 40-42 were inadvertently omitted in the claims section of the previous reply. These claims have been included in the present reply with identifiers, indicating that claims 37, 38, and 40-42 have been canceled.

### **II. Objection(s)**

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

In particular, the limitations of claims 9, 44-46, and 49 as recited are considered to be related to the receiver/decoder, however, the specification indicates that the limitations of claims 9, 44-46, and 49 are related to the transmission system.

In view of this objection, the preamble of claim 1 has been amended to recite “a

method of *transmitting* and *downloading*...comprising the steps, at the receiver/decoder of:..." Thus, claim 1 is inclusive of steps that occur at the receiver/decoder or at the transmission system. In particular, the steps recited in claim 1 occur at the receiver/decoder.

Additionally, the preamble of claim 43, which depends from claim 1, has been amended to recite "the method according to claim 1, comprising, the steps, at the transmission system, of:..." In this case, the steps recited in claims 43 and its dependent claims, namely, claims 9, 44-46, and 49, occur at the transmission system.

Claims 9, 44-46, and 49 have been amended to relate only to the transmission system, as indicated by the specification. Accordingly, withdrawal of this objection is respectfully requested.

### **III. Rejection(s) under 35 U.S.C § 112**

Claims 22, 51, and 54 were rejected under 35 U.S.C. §112, second paragraph as being indefinite. This rejection is respectfully traversed.

In particular, claim 22 was rejected, because it was not clear to as what the "downloaded loader" referred. Claim 22 has been amended to specify that the "downloaded loader" is "the instream loader," as recited in independent claim 20. Accordingly, withdrawal of this rejection is respectfully requested.

Additionally, claim 51 was rejected for allegedly enlarging the scope of claim 1 by including the subject matter of transmitting. Claim 1, from which claim 51 depends, has been amended to recite in the preamble, "a method of *transmitting* and *downloading*..." Therefore, claim 51 is well within the scope of claim 1, because claim 1

has been amended to include “transmitting” in the scope of its subject matter. Accordingly, withdrawal of this rejection is respectfully requested.

Further, claim 54 was rejected for allegedly not providing proper antecedent basis for the term “resident software.” The Applicant respectfully points to the preamble of claim 54, which recites “a method for updating resident software...” Therefore, “*the* resident software” on line 4 of the claim clearly refers to “resident software” of the preamble. Thus, this claim term is clearly defined. Accordingly, withdrawal of this rejection is respectfully requested.

#### **IV. Rejection(s) under 35 U.S.C § 102**

Claims 54 and 55 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,067,500 (hereinafter “Morimoto”). This rejection is respectfully traversed.

##### **A. Background**

Generally, ROM is “built-in” memory containing data that normally can only be read, not written to. Further, ROM generally contains applications that are known as resident software, as discussed in the instant specification (p. 15, ll. 21-23). (However, the resident software may also be stored in flash memory or EEPROM.) A bootstrap loader is typically part of the resident software. One of ordinary skill in the art would understand that the bootstrap loader loads a program into the receiver/decoder, using a much smaller initial program to load in a desired program (which is usually an operating system). The operating system is typically loaded into random access memory (RAM) of the receiver/decoder. Unlike ROM, RAM is the memory in the receiver/decoder where

the operating system, application programs, and data in current use are kept so that they can be quickly reached by the processor. Once the operating system is loaded into RAM by the bootstrap loader, the operating system is used to run other applications.

### **B. The Present Invention**

The present invention generally relates to a method and apparatus for updating resident software stored in ROM of a receiver/decoder. In one aspect, as recited in amended claim 54, the present invention relates to a method for updating resident software to a receiver/decoder. The method includes downloading an instream loader using a bootstrap loader into the receiver/decoder and downloading an updated resident software using the instream loader. The updated resident software includes a resident loader. The method further includes updating the resident software in the receiver/decoder. The updating of the resident software includes replacing the bootstrap loader with the resident loader. The method further includes deleting the instream loader from the receiver/decoder.

In another aspect, as recited in claim 55, the present invention relates to a receiver/decoder. The receiver/decoder includes resident software executing on the receiver/decoder and a bootstrap loader configured to download a loader from a bit stream. The receiver decoder further includes a memory configured to store the loader and the resident software. Additionally, the loader is configured to download an updated version of the resident software and the receiver/decoder is configured to update the bootstrap loader using the updated version of the resident software. The receiver decoder is further configured to delete the loader, once the resident software is updated.

**C. Morimoto**

Morimoto fails to teach the claimed invention as recited in claims 54 and 55. Particularly, Morimoto discloses updating an operating system of a global positioning system (GPS) via an upgrade CD. Morimoto updates the operating system by comparing version numbers of the operating system in the device and the version on the CD and, when necessary, loads a loader on the CD. The downloaded loader, in turn, downloads the software and data to the GPS system from the CD. However, Morimoto is completely silent to a bootstrap loader of the resident software being replaced. Further, Morimoto upgrades the OS of the GPS system, however, the present invention requires that the resident software is updated. As discussed above in the background, one of ordinary skill in the art would appreciate that the operating system is not typically part of the resident software.

Morimoto fails to teach the present invention, as recited in amended claims 54 and 55, because Morimoto fails to show or suggest that (1) the bootstrap loader downloads an instream loader; (2) the instream loader downloads a resident software, which includes a resident loader; and (3) the resident loader replaces the bootstrap loader. Because Morimoto fails to show or suggest all of the elements of amended claims 54 and 55, claims 54 and 55 are patentable over Morimoto. Accordingly, withdrawal of this §102 rejection is respectfully requested.

**V. Rejection(s) under 35 U.S.C § 103**

Claims 1, 2, 20, 21, 26, 27, 31, 39, and 43 were rejected under 35 U.S.C. §103(a) as being obvious over European Patent No. 0 680 213 A2 (“Menand ‘213”) in view of U.S. Patent No. 6,006,039 (“Steinberg”). To the extent that this rejection is applied to the amended claims, this rejection respectfully traversed.

**A. The Present Invention**

In one aspect, as recited in amended claim 1, the present invention relates to a method of transmitting and downloading a replacement version of resident software to a receiver/decoder, which includes a bootstrap loader. The method includes receiving a bitstream. The bitstream includes an instream loader and the replacement version of the resident software. The replacement version of the software further includes a resident loader for replacing the bootstrap loader of the receiver/decoder.

The method further includes downloading into the receiver/decoder the instream loader from the bitstream using the bootstrap loader or a previously stored version of the resident loader. The instream loader is configured to load the replacement version of the resident software. The method also includes downloading the replacement version of the resident software using the instream loader. Finally, the method includes storing the replacement version of the resident software, which includes the resident loader, into the receiver/decoder.

In another aspect, as recited in amended claim 20, the present invention relates to a receiver/decoder. The receiver/decoder includes a receiver for receiving a bitstream and a bootstrap loader for downloading an instream loader from the bitstream. The bitstream includes a replacement version of the resident software, which further includes a resident

loader for replacing the bootstrap loader.

The receiver/decoder also includes a storage means, which is configured to store the replacement version of the resident software and the instream loader. The receiver/decoder further includes a downloading means configured to download the instream loader into the storage means from the bitstream. The receiver/decoder is further configured to execute the instream loader and the instream loader is configured to download the replacement version of the resident software into the storage means.

In another aspect, as recited in claim 39, the present invention relates to a signal. The signal includes at least one loader for loading a replacement version of resident software into a receiver/decoder and the replacement version of the resident software associated with the at least one loader. The at least one loader is divided into a plurality of modules and the replacement version of the resident software associated with the at least one loader is divided into a respective plurality of modules. Additionally, the replacement version of the resident software includes a resident loader for replacing a bootstrap loader of the receiver/decoder.

One of ordinary skill in the art will appreciate that, in one or more embodiments of the present invention, the bootstrap loader downloads an instream loader, which in turn downloads a replacement version of the resident software that includes a resident loader. This resident loader replaces the bootstrap loader.

As previously discussed, the bootstrap loader is typically stored in ROM and not erasable therefrom. As the bootstrap loader cannot be modified once it is written to ROM, processing errors cannot be corrected, if the bootstrap loader is corrupted. Further, the bootstrap loader cannot be updated, if software is changes to a form unrecognizable

by the bootstrap loader. Advantageously, the present invention allows the resident software to be modified and updated.

**B. Menand '213 and Steinberg**

Menand '213 and Steinberg do not teach all the elements of the present invention.

Specifically, claims 1, 20, and 39 require “an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader.” Menand '213 does not teach this aspect of the present invention. Menand '213 simply teaches an autostart module that downloads an interactive application in intermediate code to be stored in RAM.

Menand '213 only indicates that the autostart module and associated components are stored in RAM. For example, Menand '213 states—

- “The interpreter will read the AVI data component instructions in intermediate code from the RAM 412” (col. 6, ll. 32-34).
- “When the autostart module is located, it is extracted from the data component packet service and loaded into RAM 412” (col. 7, ll. 42-43).
- “Figure 3 illustrates the procedure followed in extracting a module from the data component packet service and storing it in a buffer in RAM 412” (col. 9, ll. 21-23).

Because Menand '213 does not teach transmitting and downloading an instream loader, which downloads a resident loader, which ultimately replaces the bootstrap loader stored in ROM, Menand '213 does not teach all of the elements of claims 1, 20, and 39.

Additionally, Steinberg fails to provide that which Menand '213 lacks with



respect to this aspect of the present invention. Steinberg teaches the replacement of an operating system and parameters of a *camera* by downloading means, but is silent to the location of the loader and whether the loader is part of the operating system.

Furthermore, one of ordinary skill in the art will understand that the operating system is typically stored in RAM and is not part of the resident software. In fact, Steinberg states, “Note that block 68 refers to the camera’s memory [Download Behavioral Parameters to Camera Memory (CMOS As Well As External Storage)]. This memory can be any form of programmable memory, such as RAM, CMOS, disks or any form of removable storage device” (col. 5, l. 54-56).

Further, when Steinberg references ROM and the resident software, Steinberg only indicates that the resident software is used to assist in executing the newly downloaded operating system. For example, Steinberg states, “the configuration data is received by either of devices 16 or 18 or 20 and passed to the processor 122. The processor 122 in cooperation with memory 126, including any ROM based startup programming, parses, executes, compiles, or links the incoming configuration data, storing data as directed in memory” (col. 7, ll. 15-20). Steinberg fails to teach that the ROM based startup programming is modified. Thus, Steinberg fails to teach or suggest an instream loader and a resident loader, as described by claims 1, 20, and 39. In other words, Steinberg fails to teach or suggest that the bootstrap loader can be replaced or modified by a resident loader downloaded by the instream loader, as claimed in the present invention.

As discussed above, Menand ‘213 teaches that the autostart module and interactive application are stored in RAM. Further, Steinberg only teaches the

replacement of an operating system, which also is typically located in RAM. Moreover, Menand '213 and Steinberg fail to teach that a bootstrap loader of the resident software is updated or replaced. Therefore, the combination of Menand '213 and Steinberg fail to teach "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as recited in claims 1, 20, and 39.

Because Menand '213 and Steinberg fail to teach all the elements of claims 1, 20, and 39, claims 1, 20 and 39 are patentable over the present invention. Claims 2, 21, 26, 27, 31, and 43, being dependent on claims 1 and 20, are likewise patentable for at least the same reasons. Accordingly, withdrawal of this §103 rejection is respectfully requested.

### **C. Menand '213, Steinberg, & Bowen**

Claims 3, 4, 22, and 23 were rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg in view of U.S. Patent No. 5,367,571 ("Bowen"). With respect to Bowen, Bowen teaches downloading of software to flash. This reference was combined to show use of a flash memory. Bowen is completely silent to "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as required by independent claims 1, and 20. Therefore, claims 1 and 20 are patentable over Menand '213, Steinberg, and Bowen, whether considered separately or in combination. Thus, claims 3, 4, 22, and 23, being dependent, are likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**D. Menand '213, Steinberg, & Bestler**

Claims 6 and 25 were rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg in view of U.S. Patent No. 5,608,732 ("Bestler"). With respect to Bestler, Bestler relates to an out of band link between cable head end and a cable decoder, which allows the download of interpretive code. However, Bestler is completely silent to "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as required by independent claims 1 and 20. Therefore, claims 1 and 20 are patentable over Menand '213, Steinberg, and Bestler, whether considered separately or in combination. Thus, claims 6 and 25, being dependent, are likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**E. Menand '213, Steinberg, & Menand '216**

Claims 9, 28, 44-47, and 50 were rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg in view of European Patent No. 0 680 216 ("Menand '216"). With respect to Menand '216, Menand '216 teaches the construction of a stream containing interactive application. There is no disclosure or suggestion of "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as required by independent claims 1 and 20. Therefore, claims 1 and 20 are patentable over Menand '213, Steinberg, and Menand '216, whether considered separately in or in combination. Thus, claims 9, 28, 44-47, and 50, being dependent, are likewise patentable for at least the same reasons.

Accordingly, withdrawal of this rejection is respectfully requested.

**F. Menand '213, Steinberg, Menand '216, & Hearing**

Claims 13 and 48 were rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg, Menand '216, in view of U.S. Patent No. 5,787,017 ("Hearing"). With respect to Hearing, Hearing teaches a data acquisition apparatus and is completely silent to "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as required by independent claims 1 and 20. In fact, Hearing is completely silent to updating code or updating a loader. Hearing was combined with the other applied references to show the use of a parameters such as, name of manufacturer, model number, and version number.

The Applicant respectfully reminds the Examiner that engaging in "pick and choose" rejections, whereby various aspects of the prior art are selected without regards to their respective teachings, is improper and does not result in a *prima facie* case of obviousness. Therefore, should the Examiner seek to maintain this rejection, the Applicant requests that the Examiner provides some reasoning behind this rejection that is supported by appropriate citation to the prior art.

Claims 1 and 20 are patentable over Menand '213, Steinberg, Menand '216, and Hearing, whether considered separately or in combination. Thus, claim 13 and 48, being dependent, are likewise patentable for at least the same reasons.

**G. Menand '213, Steinberg, & Metz**

Claims 29 was rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg in view of U.S. Patent No. 5,666, 293 ("Metz"). Regarding Metz, Metz teaches a ROM loader, however, the ROM loader is not upgradeable. Metz further discloses building a stream containing several OS versions to be downloaded, but fails to teach "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader," as required by independent claims 1 and 20. Therefore, claims 1 and 20 are patentable over Menand '213, Steinberg, and Metz, whether considered separately or in combination. Thus, claim 29, being dependent, is likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**H. Menand '213, Steinberg, Menand '216, & Metz**

Claims 49 was rejected under 35 U.S.C. §103(a) as being obvious over Menand '213 and Steinberg, Menand '216, and Metz. As previously discussed, Menand '213, Steinberg, Menand '216, and Metz fail to teach all the elements of claims 1 and 20, namely, "an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader." Thus, claims 1 and 20, are patentable over Menand '213, Steinberg, Menand '216, and Metz, whether considered separately or in combination. Claim 49, being dependent, is likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**I. Menand '216, Menand '213, and Steinberg**

Claims 34-36, 52, and 53 were rejected under 35 U.S.C. §103(a) as being obvious over Menand '216, Menand '213, and Steinberg. As mentioned, Menand '216 teaches a method for formulating and interactive TV signal, but is completely silent to “an instream loader for loading [or configured to download] the replacement version of resident software comprising the resident loader,” as required by claims 1 and 20.

Menand '216 is also completely silent to “at least one loader for loading a replacement version of resident software into a receiver/decoder,” as required by claim 52. Menand '213 and Steinberg also fail to teach this limitation.

Therefore, claims 1, 20, and 52 are patentable over Menand '216, Menand '213, and Steinberg, whether considered separately or in combination. Claims 34-36 and 53, being dependent, are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**VI. Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 11345.011001).

Date: \_\_\_\_\_

8/25/04

Respectfully submitted,



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